

## **ABSTRACT**

1 A method of measuring resistivity values in relation to the azimuthal displacement of a  
2 measurement sensor displayed on a measurement-while-drilling device in a wellbore  
3 environment is disclosed. The present invention also provides an instantaneous reading  
4 of resistivity values. A resistivity sensor measures a volume having a circular cross-  
5 section, and whose center is the geometric center of the tool. Averaging removes  
6 measurement errors, such as those due to tool motion. Information on the formation  
7 resistivity is obtained as a function of the location of the center of the tool. A method of  
8 acoustic standoff determines offset of the drill tool and distances to walls. The operator  
9 gains knowledge of bedding layer formation and dip from azimuthal dependence of  
10 standoff and resistivity values.